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ABSTRACT

A three-phase study spanned five areas of interest: (1) the school as organization and social system, (2) roles and role behavior in organizations, (3) communication structure in organizations, (4) network analysis concepts, and (5) Fundamental Interpersonal Relations Orientation-Behavior (FIRO-B). In phase one of the study, staff members listed communication choices among school employees. In phase two, subjects who had been identified as holding specific communication roles were interviewed and then completed the FIRO-B instrument. In phase three, the original questionnaire was readministered to the same middle school during the next school year. The results indicated that communication roles do exist in a middle school. The study has implications for both research and practice; for example, the effects of interpersonal needs as predispositions for role occupancy should be investigated further; managers of space should strive to provide equal opportunities for everyone to share available communication channels; and school administrators should be aware of a teacher's ability to communicate and use that ability for maximum effectiveness. (DF)

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COMMUNICATION ROLES IN A MIDDLE SCHOOL

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COMMUNICATION ROLES IN A MIDDLE SCHOOL

The school, as a social system, has a structure composed of integrated offices and positions which are defined by obligations, privileges, rules and procedures. Such positions, or roles, require human action to accomplish goals. Goal directed behavior is enhanced and reenforced through communication which guides, clarifies, and encourages the development of productive working relationships.

It is known that the formal and informal interpersonal relationships within an organization, such as a school, form into relatively stable networks. These networks become the communication structure for the work oriented activities of the organization, and they provide a basis for analysis of roles, role determinants and relations of individual needs to role behavior. These in turn have importance to analysis of critical organizational variables of leadership, climate and organizational effectiveness.

Background and Rationale of the Study

There is a paucity of empirical data about communication-role patterns in schools (McCleary, 1957; Hoy & Miskel, 1982). Studies have examined interpersonal influence within networks of communication (McCleary, 1957); message transmission (Davis, 1953); volume and stability of communication networks (Charters, 1967); "grapevine" structure (Licata & Hack, 1980); and administrator networks (Smith, Andrews & Albrecht, 1984). Yet, few researchers have studied communication role relationships from the perspective of interpersonal needs, and none is available which focus upon schools.

Communication patterns and the linkages formed among organizational members have received attention, primarily from sociologists and social psychologists. As early as 1934 Jacob Moreno used sociometry as a method to obtain data about communication patterns among individuals. Examination of such data helped to identify the patterns and social choices associated with small groups and later within organizations. Differences found in organizational relationships may extend not only to the hierarchical role relationships, such as supervisory practices, leadership and other functions, but also to the role relationships among people in the same formal positions or in similar, complementary positions. There are hierarchical relationship studies, such as those on leadership; recently however, in an effort to better understand role relationships within large formal organizations, studies have focused on the interpersonal communication flow among organizational members in order to identify isolates, groups (cliques), liaisons, and bridges which link subgroups to total group structure (Jacobson & Seashore, 1951; Roberts & O'Reilly, 1978; Rogers & Kincaid, 1981; Weiss & Jacobson, 1955; etc.).

There are relatively sound reasons for arguing that important features of school organization can be studied through role analysis based upon communication theory. Bavelas (1950) states:

> When the nature of a task is such that it must be performed by a group rather than by a single individual, the problem of working relationships arises. One of the more important of these relationships is that of communication. (p. 725)

The above statement emphasizes interaction as the important ingredient in task accomplishment. and, social interaction necessarily involves communication patterns that result from such relationships. Related to this is Hoy and Miskel's observation that "the triggering mechanism in the school social system is the feedback loop" (1982, p. 56), a mechanism that allows behavior and reactions to behavior to return to the system. Feedback can be accomplished by knowledge of the existing formal and informal communication system structures.

The relationship between interpersonal communication in an organization and role taking behavior results from social interaction made necessary by the conditions which are imposed by organized life. Hoy and Miskel (1982, p. 81) further state that, "The school is a system of social interaction; it is an organized whole comprised of interacting personalities bound together in an organic relationship." Katz and Kahn (1966) note that all social systems "consist of the patterned activities of a number of individuals" (p. 17) which are interdependent because of some common output. They consider the organization to be a formalized system of roles which defines the behavior of its participants. Formalization and standardization of roles differentiate positions. Within the system, norms and values create common beliefs and expectations for appropriate or inappropriate behaviors of role incumbents. Because of this, stability and consistency are created within the organization and its structure becomes defined by the acts and events that are related to the role system. The key is that the organization members are linked psychologically by the patterns of interdependent actions.

The patterning of relationships in a school is not rigidly controlled by rules or by the nature of the work itself. Yet networks of relationships in schools have been shown by Charters, noted above, to take on a surprising degree of stability and regularity. The links in a communication net, because of this stability and regularity, assume properties such as content, frequency and psychological concomitants. These can be measured and studied as organizational variables. Individuals who are linked through their interpersonal relationships assume roles due to formal requirements but also through the orientations they take to the role. This latter point, an analysis of underlying role orientations, is unique to this study.

Conceptual Framework and Literature Review

Theoretically, this investigation spanned 5 areas of interest: the school as an organization and social system; roles and role behavior in organizations; communication structure in organizations; network analysis concepts; and, FIRO-B theory.

For the purposes of this paper, various aspects of communication

structures in schools, network concepts and FIRO-B theory are discussed. The reader may consult the original study (Rohland, 1985) for a more complete review of all areas.

Communication Structure of Schools

According to Farace et al. (1977), the concept of structure is closely related to the level of predictability or patterning of the communication exchanges among members.

> In a situation where everyone talks to virtually everyone else there is a minimum of structure; there is no restraint on the communication pattern. . . . Conversely, where communication is more restrained. . .predictability of interaction increases, then structure increases as well. (p. 60)

The fact that there are few formal restraints on communication opportunities for school personnel is relevant.

Schools are organizations that have been characterized as having "flat" organizational structure; that is, they have few hierarchical levels (Mintzberg, 1979). In addition, schools are considered professional bureaucracies wherein the knowledge and expertise of the person allows a certain amount of self-control in formulating and implementing work activities. Thus, autonomy in exercising classroom instructional decisions exists to a great degree. This autonomy has caused some theorists to argue that the subgroups in schools are tied together loosely rather than through tight, bureaucratic linkages (Weick, 1976); and, to such a degree that the decoupling actually prevents coordination, inspection and evaluation of activities, relying instead on the "myth" of credentials for legitimacy and credibility (Meyer & Rowan, 1979). Nevertheless, loose coupling and flat structure suggest the availability of many (informal) communication channels. An analysis of informal communication patterns can show whether such channels exist and if they are being used.

In a nationwide study of communications in large high schools, McCleary (1968) noted that "individual, fact-to-face communication represented a problem for principals because there was not enough time to confer adequately with individual staff members members" (p. 51) through an open door policy. Written media to communicate procedures or ideas were not perceived as effective means unless such media were linked to former communications. The need for time and help to increase contacts with staff and new teachers was reported. According to McCleary, communication as a network for obtaining and transmitting information requires the administrator to provide devices and the structure that will link individuals together in productive arrangements.

A more recent study of four urban high schools continues to support those earlier findings. Kusimo and Erlandson (1983) tried to discern the nature and adequacy of the channels through which

information about instruction flowed. Administrator, teacher, and student perceptions differed when instructional intents were compared to actual activity. It was concluded that "narrow, faulty, one-way channels tend to prevail" (p. 24). Downward communication patterns using memos, directives, and meeting agendas were used routinely and a concern with means rather than ends prevailed. Upward communication seemed to rely on face-to-face individual channels with superiors (i.e., principal, department head). These contacts were not effective because of a lack of time for one person to adequately address issues of concern to others through an open-door policy. "Upward communication runs into a bottle neck in a flat organization, even though the channels theoretically may be open" (p. 19). Kusimo and Erlandson argue that the school's structure must support multidirectional communications over multiple channels. They therefore recommend a Likert-type overlapping work-group structure with links from one group to another.

The stability of school communication structures was documented in a study by W.W. Charters, Jr. (1969). He collected data based on McCleary's 1956 research which investigated interpersonal influence in faculty and staff communication patterns in a high school. Charters wanted to examine the effects of forces (i.e., turnover, change in administration, changes in officing arrangements etc.,) on the stability of the communication structure. He found relative stability in structural patterns of the high school's staff between spring of one year and fall of the next. Constancy in personnel and common work specialties (a critical factor) helped to reestablish bonds and promote stability regardless of turnover. The principle of constancy had been stated earlier by Festinger (1950): "It is undoubtedly easier to communicate. . .to a person one sees frequently or to a person to whom one has communicated similar items in the past" (p. 280). Physical proximity also had a strong influence on communication contacts, especially when connected to work specialty. In addition, Charters noted (by sampling additional high schools and comparing them to 5 different elementary schools) that the elementary schools had larger volume of direct regular communication contacts than did the high schools. Size, physical dispersion of offices and more specialized personnel were factors contributing to the differences in communication volume.

An organizational structure which facilitates interaction with colleagues not only contributes to professional expectations but also decreases chances of subjective work alienation and isolation (Forsyth & Hoy, 1978).

Network Analysis

Network Concepts Defined

Network analysis is an approach which allows insight into the context of the social phenomena which surround actors in social systems. Network analysis also helps the understanding of social systems or organizational structure because it reveals regular patterns of relations (through communications contacts) which connect

people who occupy various positions within the system. According to Knoke and Kuklinski (1982) network analysis can illuminate the nature of the relationships that occur because other actors often influence each other when making choices or decisions. Thus, it helps account for the social behavior of individuals.

Jacobson and Seashore (1951) viewed networks as a method to study regular, work-related interpersonal communication patterns that could both describe and conceptualize an organization's communication structure. Farace, Monge and Russel (1977) define such communication networks as "repetitive patterns of interaction among the members" (p. 180). It is from these interaction patterns that network roles emerge and are defined.

Network Roles

Communication roles serve the purpose of classifying the patterns of communication links among people (Farace et al., 1977). Essentially, each role represents a type of communication behavior. By viewing the roles and how they are linked together, a network can be constructed or described.

Individuals are either involved in the network or not involved. Such involvement or noninvolvement is relative, depending upon the criteria specified by the study. Network scholars generally agree on the classification of network roles that follows.

Involved individuals may be group members and/or intergroup linkers. Group membership is usually defined by some criterion which measures the number of links a person has with certain others. Intergroup linkers are of two types: bridges and liaisons. Bridges are distinguished from liaisons because they not only have links with other groups, but also are members of one predominant group. Liaisons are not members of any group in particular; rather, they have links in two or more groups.

Of all the communication roles studied, the liaison role has the longest history of research (Farace et al., 1977). One early study which applied categorical measures to identify subgroups and individuals within an organizational was that of Jacobson and Seashore (1951). They explicated the liaison role (p. 37):

> Some individuals appear to function as "liaison" persons between groups, and. . .have many frequent, reciprocated, and important contacts which cut across the contact group structure.
>
> These liaison persons appear to be of critical importance to the conceptualization of organization in communication terms, as they are in a position to influence significantly or to control communications to and from certain group.

Davis (1953) noted the predominance of "liaison" individuals in cluster chains that passed information through the grapevine in a

medium-sized company. MacDonald (1976) tested eight hypotheses related to the liaison role. Nonliaison and liaison perceptions were compared. Schwartz and Jacobsen (1979) further explored the liaison role and characterized some of their interpersonal communication functions. Sampling the staff of a large midwestern university, they were able to confirm earlier findings of Jacobson and Seashore (1951), and MacDonald (1976). They also noted that liaisons devoted more time to committee work and committee meetings that nonliaisons. Thus, liaisons emerge as key linkers in organizational structure, akin to Likert's "linking pins" and Merton's "cosmopolitan" who links locals to outsiders. They provide some unity in a system.

The bridge role is a second type of external linking role. The fact that bridges are also group members has some importance as far as communication flow is concerned. Farace et al. (1977) note that "there is a greater likelihood that distortion will occur when the linkages for a set of groups are provided by bridges rather than liaisons" (p. 186). This is because information passes through more links (or people) in the communication chain. Bridges receive and pass information to other groups through various "others" while liaisons give messages to other groups directly. Bridge links usually have a lower degree of individual integration than regular group members because their external contacts may provide more indirect linkages and allow more diversity in information exchange. However, the fact that bridges are also group members means that they are tied somewhat to the norms of their group. Thus, bridge links have homophilic and some heterophilic attributes while liaison links are heterophilic (Rogers & Kincaid, 1981) Network literature usually includes bridge definitions along with discussions on the liaison role. As a rule, however, few if any studies concentrate on the bridge linking role alone.

Isolates are members who have no communication links with other network members. Jacobson and Seashore (1951) refer to isolates as ". . .individuals who appear to be marginal to the organization in that their contacts in the organization are few in number, infrequent, and nonreciprocated (p. 37). Tichy, Tushman and Fombrun (1979) refer to isolates as being "uncoupled" from the network. Isolates, then, are classed as nonparticipants. However, true noninvolvement is relative, depending on criteria for inclusion set by the investigator and also by the decision that links must be reciprocated in order to be analyzed. "The number of isolates will therefore vary as a function of the way the network is defined. . ." (Farace et al., 1977); thus, isolates can have several categories and may be defined by types (Richards & Lindsey, 1974; Farace et al., 1977). According to Goldhaber, Porter, Yates and Lesniak (1978) the isolate role is marked by members who are

> less secure in self-concept, less motivated by achievement. . .tend to withhold information. . .perceive the communication system to be closed, and are relatively dissatisfied with the system. (p. 78)

In contrast, group member communication roles are usually thought

of as being more homogeneous (homophilic) in attitudes and perceptions, sharing common beliefs, and passing information among others within the group itself (Roger & Shoemaker, 1971; Goldhaber et al., 1977). Their communication is devoted more to each other than to those outside the group (Farace et al., 1977). Theoretically, everyone in the group could talk to everyone else (a true clique). Typically, however, conversation may center around one or two persons (key communicators).

It is obvious then that the distribution of roles within any system is variable.

Trends in Network Studies

Much of the current network research centers on questions of methodology such as boundary specifications (Lauman, Marsden and Prensky in Burt and Miner, 1983); informant accuracy (Burt & Miner, 1983; Bernard & Hillworth, 1977); connectedness and proximity of members and member links (Rogers & Kincaid, 1981; Farace et al., 1974; Monge & Lindsey, 1974) or the like.

Homogeneous (homophilic) and heterogeneous (heterophilic) contacts between and among group members is another issue frequently addressed by network scholars when analyzing communication choices (Farace et al., 1977; Priskel & Anderson, 1979; Rogers & Kincaid, 1981). Overall results suggest that communication clusters and the dyads within reinforce themselves by supporting the relationships they contain, causing insularity and a reduction of outside contacts (Salzinger, 1982).

More recent studies have focused on networks as a framework for comparative analysis of organizational structures (Tichy & Fombrun, 1979); the relationship of organizational design to group structural properties and performance (Pearce & David, 1983); and, the roles of communicators and innovation in a research and development organization (Keller & Holland, 1983). Generally, communication roles have been found in varying degrees according to the type of organizational structure. More mechanistic or formal organizations contain distinct communication layers, while more organic structures have integrated patterns of relationship (Tichy & Fombrun, 1979).

Networking in Schools

System network studies within schools are scarce. Earliest research was based on sociometric choices within classrooms (1937-50s). The work of McCleary (1957) and Charters (1969), described earlier, provided the most fundamental knowledge of school-wide nets. There is a large time gap between those and more recent analyses, which continue to be few and far between.

Licata and Hack (1980) focused their study on the informal communication system of principals (at all levels) within a school district. The structure revealed was that of a "grapevine" used for seeking advice, venting frustrations, or getting support. Informal

grouping patterns suggested a socialization process which "sorted out" administrators into various groupings and roles.

Cusick (1981) described network relations among professional staffs in two secondary schools in an effort to determine what, if any, the effects of such network interactions might have on curriculum. Cusick found that the network structure was composed of "highly diverse, segmented, and egocentric fields" (p. 135). That is, members' teaching approaches were developed from personal relationships, background, personal opinions, outside constraints and so forth, and were "not developed or carried on within a formal or collegial network" (p. 424).

Smith, Andrews and Albrecht (1983) studied administrator communication networks in a public school district focusing on the communication structure during conditions of contraction. Their findings suggest that the decentralization and loose-coupling aspects of school communication structures may work against overall district aims in times of contraction and decline. The authors note that organizational communication needs may be different according to the environmental conditions and growth patterns (i.e., contraction and decline v.s. expansion and growth). The study recommended a strengthening of existing communication links and the development of "healthier" communication networks (p. 14).

Needs as Antecedents to Role Occupancy

Scholars have long believed that individual needs may result in repeated behavior patterns (i.e., Gouldner, 1957). Others have reasoned that personal role definitions are the links between an individual's personality and the social structure in organization. Aspects of personality are either encouraged, sustained, adapted, or in conflict with the structure (Levinson, 1959).

Solomon (1981) considers communication and education to be a reciprocal relationship. Past learning influences communication interaction, which influences what we learn. His underlying assumption is that behaviors, dispositions, environmental contexts, and the like become "interdependencies of influence" (p. 17). Beliefs, prior knowledge, and expectations determine what people respond to and how they respond. "People do not enter communication situations as blank states. They enter them with some expectations, hoping to satisfy certain a priori needs and obtain specific gratifications" (p. 58).

This study echoed a similar theme as it examined communication roles and explored the interpersonal orientation needs of those holding such roles.

FIRO-B

Fundamental Interpersonal Relations Orientations-Behavior (FIRO-B), a theory formulated by William C. Schutz (1958), is concerned with interpersonal behavioral relationships. Four postulates

are associated with FIRO theory: interpersonal needs; relational continuity based on childhood experiences; compatibility; and, group development. Fundamental elements of the theory center mostly upon the first postulate which states that every individual has three basic needs; inclusion, control, and affection. These needs take the form of expressed or wanted behaviors of the self towards others, and others to the self. Schutz believes that group interpersonal relationships (two or more people) follow the general developmental pattern of inclusion behavior, followed by control behavior, and then affection. This development is supposed to be cyclical and can reverse direction (i.e., affection, control, inclusion) if or when a relationship is withdrawn.

Using FIRO scores as a starting point to define existing relations, Schutz conducted various studies that delineated a range of behaviors which related to: prior relationships (child-parent); present situational relations (i.e., business school students and university freshman); and, consequent relations (the associations between interpersonal needs and other life aspects such as social, political and occupational choices of various groups). According to Schutz, if interpersonal orientations of individuals are known and the type of circumstances under which such interactions will take place, then it is possible to predict the path or course of those relations.

FIRO-B and the theoretical construct of compatibility (conceived of as a measure of fit between individuals and group goal achievement) have been the subject of several studies which resulted in equivocal findings. Schutz's early work, which was supported by other studies (Reddy & Barnes, 1972; DiMarco, 1974) showed a relationship between work effectiveness and interpersonal compatibility. However, findings from later studies (Hill, 1975; Hermovics & Zemelman, 1978) linking interpersonal compatibility and performance have disagreed. FIRO-B scales were used in this study to identify and describe the interpersonal needs orientations of various communicators; therefore, group compatibility levels were not measured. Future studies may wish to match communication personalities to work group structure compatibility.

Purpose of the Study

Although several questions guided the original investigation, only two are the focus of this paper:

1. Does the communication structure within a school reveal network roles (liaison, bridge, key communicator, and isolates) which are assumed by various staff and faculty members?

2. What interpersonal relationship needs are measures of the predispositions found in those who have assumed such communication roles?

These questions led to two related purposes. The first was to identify, describe and analyze interaction patterns in a middle school using established procedures referred to as network analysis. From these data, roles of communicators and of isolates were examined. Second, the interpersonal relationship needs of inclusion, control, and affection were analyzed as variables which can predispose communicators or isolates to assume those communication roles.

Methodology

Design and Data Collection Procedures

This study spanned a period of approximately one year, beginning in March of 1984 and continuing into February of the next school year (1985). An urban, middle school of approximately 965 students and 51 staff members was the site. Data were collected in three phases from a staff that involved administrators, instructors, specialists, aides, secretaries and custodians.

Phase 1 used a questionnaire to list communication choices among school employees. Data from the questionnaire were placed into who to whom matrices which were analyzed by network methods to identify specific communication roles. Criteria for identifying the communication roles were established a priori.

Phase 2 consisted of two parts. Interviews were held with selected subjects who had been identified (by network analysis) as holding specific communication roles and who met specific selection criteria set by the investigator. The FIRO-B instrument (written statements evaluated by Likert-type scales) was administered to each participant following the interview. FIRO scores were computed from a scale-rating key. These scores indicated the interpersonal orientation of each subject for inclusion, control and affection needs.

Phase 3 was a readministration of the original communication questionnaire to the same middle school during the next school year. The communication structure of the school at Time Two was compared to the structure at Time One. A stability index was computed.

Instrumentation

Three instruments were used to gather data and each is explained in this section.

Interpersonal Communication Questionnaire

The communication questionnaire consisted of four questions which referred to school related topics. The first question asked respondents to list those with whom they communicated about school affairs in general. Questions two, three, and four referred to more specific topics, such as student affairs, parental involvement issues, and professional conditions.

In addition, subjects were asked to check three variables that would describe each contact: frequency of contact, place of contact, and effect of the contact. Demographic information such as sex, tenure in the school, teaching specialty, and participation in school related activities, was also obtained. (See original study for demographic results.)

Interviews

Subjects, identified by network methods as holding specific communication roles and meeting selection criteria, were interviewed using a tunnel interview schedule. The interview schedule was pilot tested using 5 teachers from a similar middle school in another school district.

Purposes of the interview were: 1) to validate the communication questionnaire choices; and, 2) to obtain information about the subjects' perception of their communication role(s).

One portion of the interview dealt with three communication role-styles which were described to participants. Each was then asked to identify which style was most characteristic of him/herself. Subjects were also asked to name those with whom they regularly spoke and to give examples of recent communications. Finally, participants were asked if they thought they communicated well with others, and why or why not.

All interviews were conducted face-to-face and were concluded with the administration to the FIRO-B scales.

FIRO-B

The fundamental interpersonal relations orientations (FIRO) measured in this study are defined by Schutz (1956) on the behavioral level, hence the instrument used is called FIRO-B. The three needs of inclusion, control, and affection fall within the context of the individual's behavior to others (expressed) and the behavior desired for self from others (wanted).

To measure the need areas, a FIRO-B instrument uses six Gutman scales of 9 items each (54 items). The items offer a Likert-type rating ranging from 1 (usually) to 6 (never). Subjects choose the rating that best applies to them. For example:

I let other people decide what to do.
1. usually, 2. often, 3. sometimes, 4. occasionally,
5. rarely, 6. never

FIRO-B has a reproducibility level of .90 and a test-retest reliability average of .77 (Schutz, 1958, p. 66). Content, concurrent, and predictive validity evidence is presented by Schutz (1958); the FIRO Scales Manual from Consulting Psychologists (1967); Underwood and Kraft (1973); and others.

Sample and Unit(s) of Analysis

The sample population at Time One consisted of 51 faculty and staff members of an urban middle school. There were three non-respondents after two follow-up letters. Thus, the total population sample consisted of 48 subjects.

This study required analyses at two levels. The first level was the middle school itself. It is an organization functioning as a unit with a communication structure composed of communication roles (as noted in the communication theory review). The second level of analysis involved the investigation of characteristics of certain communication roles. Individual members composed groups which became subsamples of the total population (described earlier). Thus, subjects and their links became units of analysis bounded within and by the school itself. Network analysis portrays the school's communication role structure, while interviews, FIRO-B and demographic information describe the characteristics of the individuals and the roles.

Data Analysis Procedures

Matrices

Communication data obtained from the questionnaires were assembled into (N,N) adjacency matrices, one for each question. If an actor cited another in response to a question, a one was noted, otherwise a zero was recorded. Resulting matrices were basic who to whom matrices that contained both reciprocated and nonreciprocated nominations. Each question represented a different network of communication patterns.

To identify communication roles and subgroups for each net, ONLY reciprocated nominations were used. Therefore, from each basic matrix, a reciprocated matrix was made, again, one for each question. The resulting reciprocated (and reduced) matrices were then subjected to established matrix manipulation and multiplication procedures. Communication subgroup and role identification for each net were formulated according to established network criteria. Path distances and connectedness measures were computed using standard formulas from Rogers and Kincaid (1981).

Selection Criteria for Interviews and FIRO-B

Matrices formed from Question (Net) One became the basis for identification criteria. That question asked "With whom would you speak about any school condition in general?" Responses, therefore, would indicate the general communication structure of the school on any normal, routine day. Questions Two, Three, and Four pertained to specific issues and would elicit choices that might deviate from general communication patterns.

The criteria for selecting communicators and isolates were:

Communicators

1. Those who were identified by network criteria as holding a role of Bridge, Liaison, or Key Communicator(s) of a subgroup in the first net, Q.1. (17).

2. Those holding membership in the first net and membership in two or more of the other nets. (6).

Isolates

1. Those who received zero (0) reciprocated nominations in the first net (Q.1) and zero (0) in two of the other nets. (6).

2. Those who received one (1) reciprocated nomination in the first net and zero (0) in all others.

Interviews

Perception of self. Data from interviews were content analyzed. Interview information was separated into categories corresponding to identified network roles (i.e., communicator types and isolates). Replies to the three role-types described at the beginning of the interview were recorded and used to compare (by observation) self-perception of role occupancy to actual net roles.

Validation. Subjects were asked to name those with whom they communicated regularly and to give examples of issues or topics they would ask someone about. A list of each subject's communication choices was attached to the interview schedule so that the interviewer could validate and confirm previous choices.

FIRO-B

Two scores (expressed, wanted) for each of the three need areas were calculated (using the FIRO scoring key) and were listed by communication role category and subject number.

Analyses of variance (ANOVA) were calculated to examine the relationships between FIRO scores among members of the various communication role groups.

Findings

Findings are presented in 3 main sections. First, general background information is given which identifies school communication structure at Time One and Two. This is followed by FIRO-B data which analyze role members' need dispositions. Third, communicator role profiles are presented using interview data.

General Information

Forty-eight of the 51 subjects sampled at Time One replied to the communication questionnaire. Of these, 19 (40%) were male; 29 (60%) were female. Replies to Question One, the general communication structure, showed that 37 of the original 48 had reciprocated nominations (11 males (30%) and 26 females (70%)). These subjects became the pool from which specific communicator roles emerged. Established criteria and inspection across all four nets identified 23 participating communicators. Eleven of the 48 were identified as possible isolates on the first ordered matrix. They became the major pool from which six of the study's nine participating isolates were drawn.

Unless otherwise indicated, all calculations and statistical analyses were based on data collected at Time One from 32 participating subjects who met established criteria for holding four specific communication roles.

System density measured .15 at Time One. Figure 1 and Table 1 present the school's c communication structure in matrix form.

Communication Structure at Time Two

General information. The staff was composed of 50 members at Time Two, 18 (36%) male and 32 (64% female). Forty-seven individuals responded to the questionnaire. The general communication structure (Net One) of reciprocated contacts contained 38 members, 10 (26%) males and 28 (74%) females. Nine isolates appeared on the first ordered matrix. System density measured .16 at Time Two.

The staffing pattern remained fairly constant, as 48 of the positions were common to both years. In all, there were seven new staff members (three faculty and four aides). One new faculty position was added, while two previous faculty positions had duties reassigned to others.

Stability

Thirty-one subjects remained as members of the general communication structure from Time One to Time Two. The stability of the contact structure measured 90.57% (48 of the possible 53 reciprocated nominations remained the same). The matrix of Net One at Time Two (Figure 2) contained 59 reciprocations which represented an 11% increase in communication links among net members.

Net One, Time Two

As can be seen in Figure 2, eight groups and one dyad emerged in the new structure (as compared to four groups and 6 dyads at Time One). Essentially, the new groupings represent a shifting of communicator positions within the previous structure with the exception of group C which contains new net members.

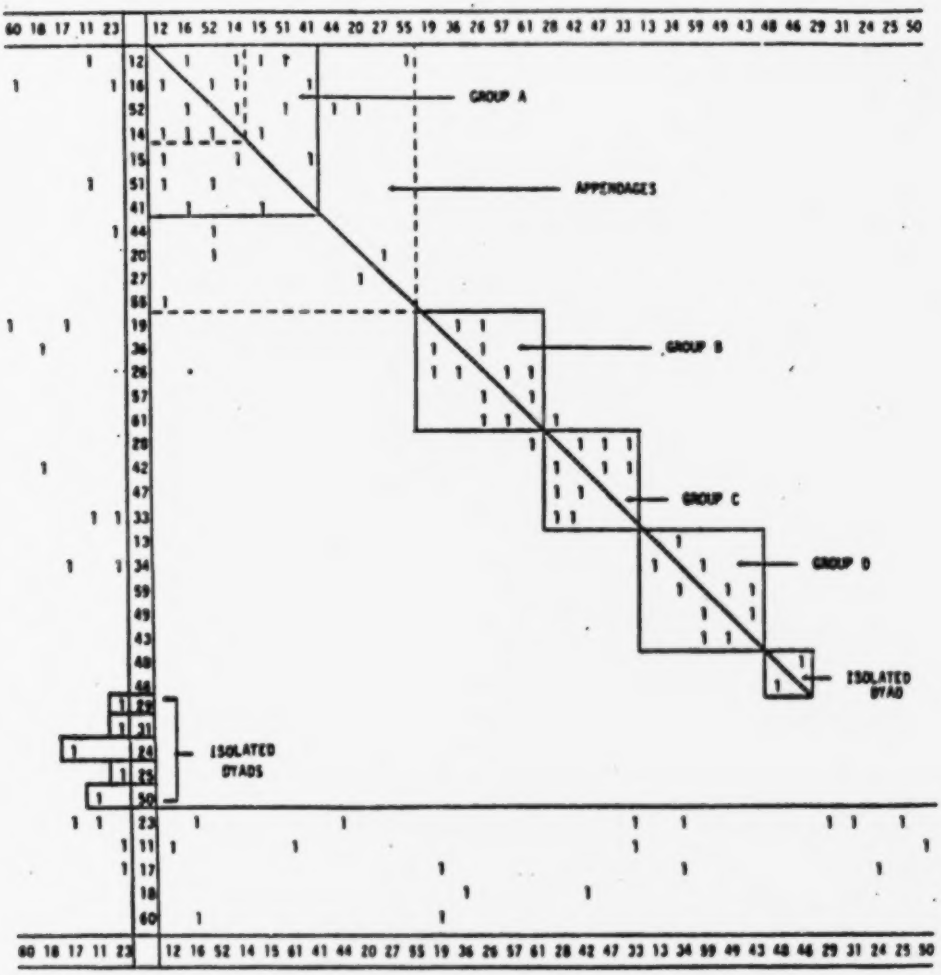

Figure 1. Matrix of Net One: General Communication Structure, Time One

Table 1

Communicator Roles of Net One

Role	Group and Subject Number			
	A	B	C	D
Liaison	60-11-23	60-18-17	18-11-23	23-17
Bridge				
True		61	28	
Liaison	12-16-51	19-36	42-33	34
Key Group Communicator	14 (12-16)*	26	(28-42)*	59

*Held dual roles

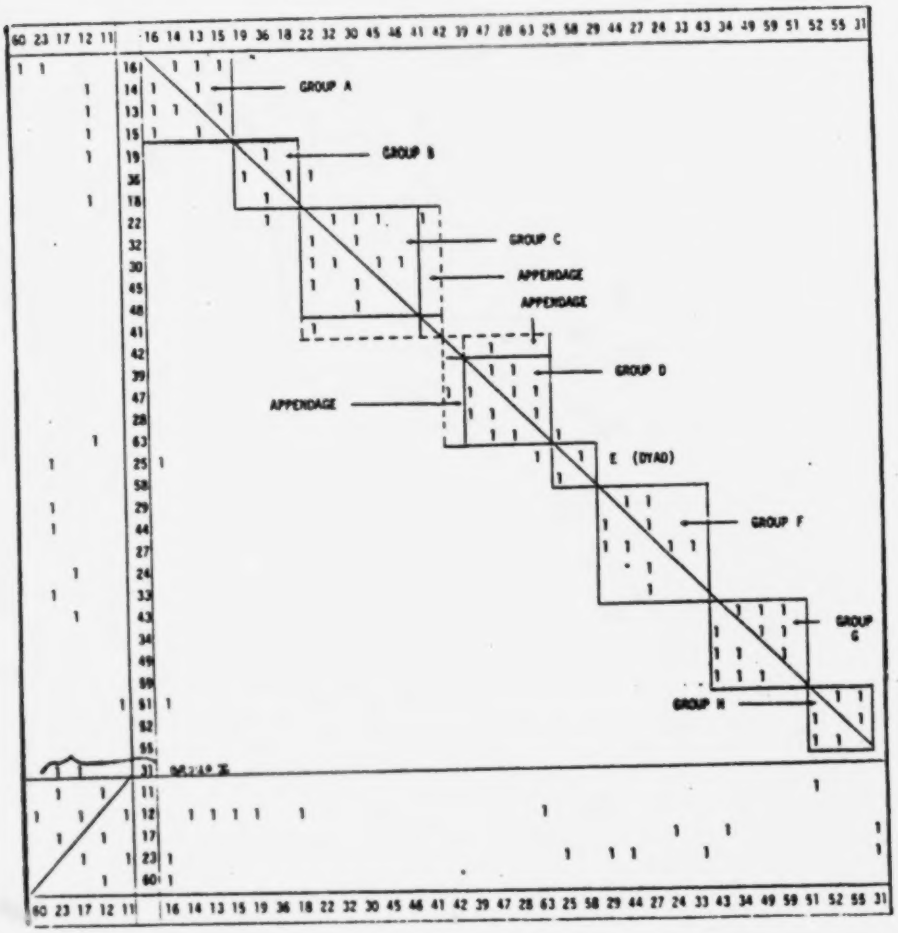

Figure 2 General Communication Structure: Time Two

Note: Subjects Added 22, 30, 32, 39, 45, 58, 63

Group Equivalents

Time 1		Time 2
A	=	A
B	=	B
		C (new)
C	=	D
		E (dyad)
		F (new)
D	=	G
		H (new)
		I

FIRO-B Relations

An analysis of variance compared scores for each of the FIRO-B dimensions (expressed and wanted) in the three need areas (inclusion, control, affection) among the four communication groups (liaison, bridge, key communicator, isolate). There were significant differences between bridges and all other groups for the FIRO need of wanted inclusion, F (3.28) = 5.42, $p < .05$; and, between bridges and keys for wanted affection, F (3.28) = 3.01, $p < .05$. Although not in the significant range, the F probability (.1090) for the need area of expressed inclusion is near enough to indicate a possible trend for this FIRO dimension. The bridge mean was the highest of all groups for this need area as well (M = 5.88).

The analysis of variance calculated for bridge and key communicator comparisons indicated significant differences between scores for these two groups in all areas except expressed control. In order of significance, the FIRO need predispositions were:

wanted affection, F (1,16) = 8.47, $p < .05$
wanted inclusion, F (1,16) = 6.19, $p < .05$
expressed affection, F (1,16) = 5.09, $p < .05$
expressed inclusion, F (1,16) = 4.51, $p < .05$
wanted control, F (1,16) = 4.32, $p < .05$.

When comparing bridges to liaisons the analysis of variance indicated a significant difference between scores of these two groups in the need area of wanted inclusion; F = (1,12) 7.06, $p < .05$. Comparing bridge and isolate scores the analysis of variance again indicated significant differences between these two groups on wanted inclusion; F (1.16) = 13.47, $p < .05$, and expressed inclusion, F (1.16) = 3.56, $p < .05$. Bridge means were consistently higher in these need dimensions.

Interview Data

These data validate subject contacts and present information relative to perception of self as a communicator.

Self-Perception

Communicators. A verbal description of network roles was presented to those identified as communicators. When asked to choose the style that best described them, 22 of the 23 classified themselves in a communicator role while one considered himself an isolate: "I'm kind of antisocial but I am capable of working in groups if I need to." All five of the liaisons selected the liaison style; 7 of the 9 bridges classified themselves as such; and, 6 of the 9 key communicators felt they occupied group or bridge roles. The majority felt that while they communicated most frequently in their preferred style, they occupied more than one role and changed that role according to the situation. One liaison commented, "It's a hard question. . .I would do all (occupy other roles). It depends on what you are doing." Another said "I'd change my style if there's a need." A bridge said,

"I like all three (styles). At times you need to work in a group, other times I don't want to be tied. I can take any role." A typical key communicator perspective was, "I'll change the style when I need help and new ideas, or be alone if I don't need help."

The majority of communicators (all roles) have a primary group they talk to regularly about almost anything. However, all clearly stated that it was important not to confine themselves solely to these contacts but to seek information from many sources. . ."you have to decide who has the best information" (Bridge). One commented, "Yes, there are some I talk to consistently, four or five, about anything. Some others I would consult with according to the subject. It depends on their knowledge." Another remarked, "I talk to pivotal people; it depends on the issue involved." A typical bridge comment was, "Yes, there are some people I can go to for anything, and there are other faculty for special things." Another explicitly stated, "After I decide what I need to get, I think of who is the best source; then I go to it."

Expertise and reliability as an information source were the major criteria for choosing contacts outside of the primary groups. Confidence, trust, honesty, similar interests and philosophies were characteristics most commonly used to describe regular contact members. A typical reply was, "I talk to them because I value their opinion. . . they have expertise in the area I'm seeking information." (Bridge). One liaison commented:

> Honesty and integrity are important in character. I'm a good judge of character and I seek counsel (information) from those who have a high value system. I trust and respect them.

Another replied, "If they were able to help me before then there is a feeling of trust. If the information was false or not reliable I'd lose that feeling of trust."

Self-Perception

Isolates. After hearing descriptions of the specific communication roles, 4 of the 9 subjects classified themselves as isolates; 4 described themselves as bridge/group members; and, 1 perceived himself as a liaison.

Those who chose the isolate description as typical of themselves felt that while group involvement might be necessary, it was something they avoided if possible. For example, "Groups slow you down. The bigger the group the slower you go. . .you don't have those frustrations when working alone." One commented, "I am not a group person outside of school, I don't (emphasized) belong to groups. In school sometimes groups are necessary but I like to do my paperwork alone." Another stated, "I don't want a lot of involvement. I'm willing to communicate but I want to be selective. I initiate contacts but I always have a reason. . .it's not just to chat."

In general, those isolates who classed themselves in communicator roles stressed that their communication style was often situational and that while they are willing and often do work in a group in order to gain information, working alone was really preferred. One subject said, "I will use a group as support, but I prefer to work alone." Another replied, "I don't mind group work, but I can organize better without groups. The more people in a group the less you get done. . ." In the same vein, one stated, "I work alone often because it's easier;" while another said, "I can be part of a group but not necessarily the outstanding element of that group." All agreed that their style is relatively constant in routine situations.

Four of the 9 isolates usually talk to the same people while 5 do not. Those subjects felt they usually talked to others on a situational need basis instead. Responses ranged from comments such as, "Yes, I usually talk to the same people because they know what I want," to "No, I can't imagine talking to the same person--no one knows everything!"

Without exception, all isolates stated that they decide who to talk to according to the information they seek. Reliable information and expertise were most important, while 2 subjects also added proximity as another factor. For example; "I go to who has the information;" or, "I look for expertise and, I may talk to some more than others because they are in the same place in school."

Few of the isolates perceived themselves as being exceptionally influential to others, and most characterized their contacts as mutually beneficial. However, one subject replied, "Many ask my opinion. I feel I can answer questions because I have expertise in many fields. They (others) feel confident in my opinion."

Conclusions, Discussion and Implications

Based on the two questions which were the subject of this paper, the following conclusions are presented and discussed.

Q1 Does the Communication structure within a school reveal specific network roles that are assumed by staff and faculty members?

1. Network role of liaison, bridge, key group communicator, and isolate existed in the middle school setting; and, they emerged from the informal communication structure.

As found previously, in other organizational settings, (Jacobson & Seashore, 1951; Weiss & Jacobson, 1955; Roberts & O'Reilley, 1978; Rogers & Kincaid, 1981, etc.) these assumed communication roles formed a nucleus of interaction patterns that described and defined the school's formal and informal communication system. Furthermore, liaisons, bridges, key group communicators and isolates were found to exist in both the general (routine) activities structure and in net structures involving the need for specialized information flow.

The prevalence of these communication roles, as fundamental elements in information transmission, indicates once again, the importance of the informal organization to the functioning of the formal organization (Bernard, 1938). It also highlights the utilization of both instrumental and expressive communication as grounds for fulfilling work and personal information needs of organizational members (Etzioni, 1964).

Role positions were assumed voluntarily. Administrators, specialists, staff, and faculty could be found in all key roles and/or in subgroup membership positions. This signifies that the communication roles assumed by the staff did not necessarily indicate position authority since any member could freely adopt any role. No undue restrictions were placed on the use of communication channels because of organizational requirements. That is, there was equal opportunity of participation for all.

Although schools have an authority hierarchy, they are most often characterized by a flat structure and fairly predicable routines. The contact choices revealed by this network analysis reflected the flat structure described by Mintzberg (1979) and supported the perspective of the school as an open social system (Weick, 1976) from the standpoint that few formal restraints were placed on channels, opportunities for communication, or on the formation of informal subgroups within the established structure.

2. Communication network roles changed according to the types of issues addressed by school personnel.

Roles in specialized nets varied from the general work-related structure (see original study, Rohland, 1985). Positions and roles within groups and subgroups shifted according to member's needs, functions or interests. This was illustrated by the fact that formal leaders (principal, vice principal) did not occupy one role exclusively, nor were the positions (they) assumed always considered a key communicator role. For example, the vice principal held the bridge position in nets one and two; a liaison position in net three; and, key group communicator position in net four. The principal was in liaison, subgroup membership and dyadic positions respectively. Staff members that consistently held key roles other than subgroup membership (i.e., #17, 23) emerged as natural (informal) leaders.

Another example is that of the liaison role, which was most evident (five positions) in net one, the general structure. When, however, special issues were the subject of information exchanges, that role diminished and those occupants assumed group related roles.

The changing of roles across nets to transmit information supports the early work of McCleary (1957) on communication role patterns in schools and concurs with Davis (1953) who argues that information passes through stages of transmission with various individuals. Role changes across nets support the notion that group structures have many sets of roles and activities that are differentiated in terms of

communication linkages (McGrath, 1970).

3. Network roles distinguished themselves by specific types of communication behavior.

Characteristics commonly associated with key network roles were apparent in the behavior of all role occupants. These findings support the literature of major network and communication theorists (Farace et al., 1977; Jacobson & Seashore, 1951; Pearce & David, 1983; Rogers & Kincaid, 1981, etc.) Data from this study expand and clarify network role behavior as viewed in the school setting.

In general, participants described themselves as holding roles they actually occupied. Interview data revealed that individuals were aware of their communication styles. The following discussion briefly describes the network role characteristics found in this study.

Liaisons were nongroup members who had links to subgroups or to dyads. This variation in contacts confirms the heterophilic behavior (Roger & Shoemaker, 1971) of a liaison.

The administrators were primarily liaisons, at both times, within the general structure. They were, therefore, functionaries, who passed information directly to groups or to individuals in dyadic relationships. This is an important aspect of information dispersion, (from an administrative perspective) since most literature supports the view that content accuracy is higher when content communications are passed directly by liaison members.

Bridges were group members who had contacts to other groups or to dyads. As with the liaison, bridge roles provided external links to all groups for work-related information in the general communication structure, and in specialized nets. A variety of individuals occupied bridge positions (teacher, administrator, specialist). Therefore, no one group is particularly associated with this role.

Group links and external links, common attributes of this role, are evidence of homophilic and hetereophilic behavior as described by Rogers and Kincaid (1951).

Key Group Communicators exhibited true homophilic behavior as noted by Roger and Shoemaker (1971). Their contacts remained as links within the group. Roles of key group communicators were found in all nets; and in several cases, key group communicators were also bridges. The presence of strong within-group communicators accounts for the adequate intragroup connectedness revealed when matrices were squared and cubed.

Group members, keys within the groups and dyadic relationships, were roles that primarily facilitated group information processing about student, parental, and professional concerns.

Isolate positions indicated that there were members outside of the main communication structure at both times. It is important to

note that this study used reciprocated nominations as the basis for all links. An unreciprocated nomination signifies that there was no agreement between members on a communication link. Isolate positions represented unreciprocated nominations according to the criteria employed. However, these positions do not always indicate total uninvolvement with others. That is, isolates may initiate contacts with certain members, or be contacted by some members.

This study clarified this last point and provided a somewhat different perspective of the isolate than is usually portrayed by studies of other organizational settings. Goldhaber, Porter, Yates and Lesniak (1978) and others present the isolate as a member removed from the system; less secure in self-concept; less motivated by achievement; tending to withhold information; and, perceiving the communication system to be closed. Data gathered from the communication questionnaire revealed that isolates were not totally without access to information. They initiated dyadic contacts, even though the contacts were not always reciprocated. Questionnaire data and interview comments indicated moderate participation in activities, as well as a willingness and an awareness of the need to communicate. Their reluctance stemmed more often, not from antisocial attitudes, but rather from a frustration with group processes. In this school isolates may desire inclusion, but it is preferred as a dyadic relationship rather than as a clique or group relationship. The term coined by this study for the above observation is limited inclusion. As discussed, it leads to the following conclusion:

4. Isolates were not an integral part of the system's communication structure but they were interested in limited inclusion opportunities.

Interview comments further indicated that this later point (inclusion without the obligations of group membership) would be appealing to isolates. For example,

> I don't really want alot of involvement; I'm willing to communicate, but I want to be selective because then I can clarify the information.
>
> I participate when we have (committee) meetings, (sigh) but I hope we don't have alot (of meetings). I like to get in and get out. . .the more people you have in a group the less you get done.

Limited inclusion was apparently acceptable; however, most isolates preferred such inclusion without the encumbrance of group processes.

5. Communication contact structures were generally stable over time and they exhibited similar subgroup patterns.

Network analysis revealed emergent communication clusters that remained highly stable. The contact patterns and roles existing in Net One (Time One) persisted into the next academic year. The subgroup membership and patterns of Net One at Time Two were similar to

the contact structure at Time One. Liaisons, bridges and key group communicators once again occupied a central place in the communication system. The stability of this communication structure (90.57%) supports data from past research (Charters, 1969) which found similar stability in the patterns of staff contacts in a high school. Such stability reflects the coherence and relatively nondisruptive routine of school life. For example, the stability of this school's structure allowed members to join on leave a group without destroying its identity as a clique or subgroup. Essentially, the expansion and changes in subgroup patterns from Time One to Time Two, represented a shifting of positions between some groups, and additions to other groups by one new and other staff members.

The 11% increase in reciprocated contacts reflected the inclusion of former isolates into the network and the expansion of former dyadic/appendage links into broader relationships. The reason for isolate inclusion is not clear but it may be related to recent informal additions to school routines, such as active enforcement of student related rules, and the implementation of a new class for student self-improvement. The casual relationship implied here tends to support the notion of the school as a place where there are loose organizational patterns that allow structural change, innovation, and role definition changes. On the other hand, the stable core of the groups provides support for the perspective of the school as a somewhat mechanistic and rational organization. That is, positions provide continuity, stability, and affiliations that can affect or stabilize communication choices. Organizational perspectives aside, the fact remains that in this school, the formal structure does not dictate the choices that result in highly stable communication groups and subgroups.

There was, as well, the reestablishment of communication bonds by different people occupying the same positions at both times. The high stability measure indicated that new members moving into positions formerly occupied by others establish similar work-contact patterns. For example, subject #63, new to the school at Time Two, reported contacts with many of the same individuals as the previous role occupant.

Stability was also reflected in the low saturation measures (.07, .08) and low system density measures (.15, .16) from Time One to Time Two. However, this is somewhat negative in connotation because low saturation and low density measures indicate stability in <u>nonuse</u> of available channels. Many individuals consistently allow communication avenues to remain unexplored.

6. <u>Isolate positions were not fixed</u>.

Isolate positions (9) were identified at Time Two. One of the 9 had been an isolate at Time One. Four of the 9 isolates were new to the school at Time Two. Background data also revealed that two of the others were nonrespondents at Time One and had received only one reciprocated nomination each. The remaining 2 isolates were in appendage/dyadic relationships at Time One. These data suggest that

isolate positions are not fixed, and this leads to a related conclusion.

7. Peripheral positions (i.e., appendages) may be either potential isolate positions or they may expand into broader relationships.

As noted previously, the 11% increase in reciprocated contacts at Time Two reflected the inclusion of former isolates into the network, and the expansion of former dyadic/appendage links into broader relationships. On the other hand, dyadic/appendage links of two members (at Time One) turned into isolate positions at Time Two.

The potential for peripheral positions to expand or retract can be related to the new staff members who were found to be in isolate positions at Time Two. This study suggests that a waiting period during which new members establish credibility within the system becomes a delicate balance wherein the potential to expand or retreat exists.

Conclusions concerning the isolate position emerged from data based on a single site investigation. While a larger sample would allow generalizations, these findings expand the isolate portrait and present this role in a manner different from that which has been presented in the literature to date.

Q2 What interpersonal needs are measures of the predispositions found in those who have assumed specific communication roles?

1. Interpersonal needs (inclusion, control, affection) varied according to the communication role and provided measures of predispositions by subjects to assume those roles.

Organizational theorists have long associated role relationships to formal requirements (i.e., Katz & Kahn, 1966); but, the analysis of underlying role orientations in terms of interpersonal needs is unique to this study. Needs of inclusion, control, and affection were outlined by Schutz (1958) and related to interpersonal behavior patterns of individuals. The following discussion presents evidence that these needs exist and are associated with specific network communication roles.

Inclusion. When comparing all groups, the analysis of variance indicated significant differences between the bridge scores and others in the wanted dimension of inclusion. The mean of FIRO scores for bridges (5.88) was much higher than scores of other groups*. This suggests that bridge communicators have a higher need than others for wanting to be included. Considering that the bridge role combines group membership links with out-of-group links as well, this finding seems logical. Bridge communicators can satisfy wanted inclusion needs with links that access other groups and/or individuals while also maintaining strong links within a primary support group. Out-

*Note: The Firo scales range from 0-1 as very low to 6-7 as very high.

of-group contacts also become a source for links that form two or three step chains, thus allowing even more inclusion and strength from indirect ties (Grannovetter, 1976).

Note that there was little difference in the mean scores for isolate ($\underline{M}$ = 1.33) and liaison groups ($\underline{M}$ = 1.40), which express a very low need for wanted inclusion. It was observed earlier that liaisons limit inclusion by excluding themselves from group membership. The notion of limited inclusion may be a need-based characteristic of both isolate and liaison roles.

The low need for wanted inclusion by key communicators can be explained by the fact that they are strictly group members who exhibit homophilic behavior (Rogers & Shoemaker, 1971). It is possible that the need for wanted inclusion is satisfied by interactions with other group members who share common interests, attitudes and meanings. The sense of belonging that results from mutual similarities can balance needs for wanted inclusion.

Mean scores for expressed inclusion indicated a moderate need in this dimension for all groups. The slightly higher means shown for liaisons and bridges suggested that they were more willing to include others than are keys or isolates. Bridge and liaison roles include a variety of contacts while key and isolates limit their links to a relevant few.

Control. In general, control did not seem to be an area that differentiated or varied greatly with roles in either dimension. It is possible that the autonomy enjoyed by school personnel allows members enough command over their work and dominion in the workplace to satisfy the needs for expressed and/or wanted control.

Although no significant difference existed between groups, liaisons did have the higher mean (5.4) in the expressed need area for control. Expressed control signifies that the individual wants to be the controller. Liaisons exhibit this characteristic by fostering and selecting links with various others while remaining aloof from the influence of a group.

Isolates had the lowest mean (2.55) for expressed control needs. This finding appears to be consistent with that role. It would seem that an individual concerned with control would not consciously limit communication/information links as do isolates.

Affection. No two groups were significantly different for the expressed dimension of affection needs; however, bridges appear to have a slightly higher need than others to interact in ways that show affection ($\underline{M}$ = 5.55). Expressed affection ties usually take the form of a sharing of feelings and/or a willingness to confide or express thoughts, wishes, anxieties and the like. This need can manifest itself in overtures of friendship, to individuals outside of their immediate group, which ultimately lead to the characteristic bridge link.

The lower mean noted for keys may indicate a satisfaction with group links. It is possible that keys may consider their communication group an adequate arena for expressing friendship to others.

Note again the similarity between liaison and isolate scores (4.40, 4.00, respectively). Moderately expressed affection behavior may take the form of dyadic relationships where greater degrees of friendship involvement can be attained more easily (in a one to one relationship) than in a group. Since dyadic relationships were more frequently evident for liaisons and for isolates, this role interaction pattern seems plausible and consistent with a moderate need for expressed affection.

Wanted affection was a dimension of interest. Here, liaison, bridge and isolate scores were higher than for any other need area. This dimension is related to the need to be liked and to receive from others signs that express friendliness, acceptance and affection. For the liaison, wanted affection needs may translate into behavior that seeks exposure through communication links equally with all members, while at the same time avoiding ties to one group. On the other hand, to the bridge, group membership may provide a more secure base of approval, because confidences and concerns can be exchanged more easily.

Isolate scores indicated a moderate need for wanted affection. This implies that, while the need normally exists, it can be satisfied with fewer contacts. It is possible that isolates and liaisons both require more emotional distance from their links than do bridge members.

The significant differences between bridge scores ($\underline{M}$ = 6.66) and key communicator scores ($\underline{M}$ = 3.55) in wanted affection reflected the homophilic behavior usually descriptive of group members. Key communicators are central group members, and they initiate and receive group communications. The centrality of this position, coupled with the common beliefs, norms and values that usually bind groups together, probably offer key communicators enough opportunities to cultivate the confidences needed for their affection satisfaction.

Analyses of variance between bridges and key communicators; bridges and liaisons; and, bridges and isolates, consistently indicated differences between these groups in the need areas of inclusion and affection. That is, bridge role occupants had a higher degree of inclusion and affection needs than did liaisons, key communicators and isolates. Group membership combined with out-of-group connecting links may reflect externally (behaviorally), a personal need to have more extensive relationships with people (inclusion) that can lead to direct expressions of liking and being liked (affection).

The following conclusions are drawn from the previous discussion:

2. Inclusion and affection were the two interpersonal orientation needs that predisposed members to adopt the bridge communicator role.

Differences between the various communication groups permit the portrayal of liaisons, keys and isolate individuals as having a moderate need to include others but a much lower need towards wanting to be included. This is in contrast to the bridge member who wants inclusion in both dimensions more than others. These needs can explain why the bridge is both a group member and a linker while other roles maintain one primary function.

3. Liaisons and isolates exhibited similar inclusion needs.

The similar scores of liaisons and isolates for moderate expressed inclusion, and very low scores for wanting to be included, strongly implied a like perspective--that of limited inclusion. These needs may express themselves in behaviors that seek contacts without group commitments, a characteristic of both liaison and isolate roles.

Implications for Research

The findings of this investigation have direct implications for both research and practice.

1. Communication structures in schools can be studied through the method of triangulation that was used in this study. Interviews, onsite observations, analysis of records, and consultations with key informants, provided convenient and effective overlapping techniques for validating and clarifying the data gathered from the communication and FIRO-B instruments.

Network analysis results based on data from questionnaires are most effective, when combined with qualitative techniques (as above), because they check informant accuracy for contact choices and provide information about the context in which such links occur. Other quantitative data based on similar paper and pencil instruments are clarified when the investigator can talk to people and view them in their working environments. Without overlapping techniques, network data are static and communication processes cannot be adequately interpretated.

Studies using network analysis methods should be continued, but such studies would be more efficient if a computer based program was used for data analysis. Existing computer programs will have to be evaluated and modified to suit the sample size used and the mainframe facility where analysis takes place.

2. The effects of interpersonal needs as underlying predispositions for role occupancy should be investigated further. A secondary analysis of data (comparing bridges to keys) indicated that between 23 and 28% of the variance in FIRO scores for inclusion could be explained by the bridge role. A larger sample size would more accurately predict the relationship of interpersonal needs and communication network roles. Such studies would also confirm the influence and

potential of the bridge role as a linking agent, and the similarities between isolate and liaison perspectives/needs.

3. Literature pertaining to need based motivation theories should be reexamined in light of the evidence presented here. That is, if interpersonal needs can predispose individuals to assume informal communication roles, is there a relationship to other psychological needs? Results from such a study would have implications for all organizations in the areas of human resource development.

Implication for Practice

The findings have direct application for administrative practice in two broad areas: school environment and human resources.

School Environment

1. Managers of space should strive to provide equal opportunities for everyone to share available communication channels. Intervention efforts aimed at integrating others into a network, or at improving the use of existing channels to increase innovation and productivity, would be more helpful if they are focused on the removal of barriers that prevent a more closely linked system. Such barriers exist in schools partly, because of the somewhat rigid time schedule of classes; the size and physical arrangement of the work place itself; and, the fact that the act of teaching takes place in relative isolation. Teachers spend most of the day in one room or area and seldom visit each another. Feedback, advice, or information must be discussed in off-teaching times. An environment should be created where professional talk can take place without the external pressure of the workplace intruding on the communicative processes.

2. Finally, it is evident that all faculty, but <u>especially</u> new or isolated staff members, ought to be located in stations that take advantage of the determinants of speciality and proximity as links <u>into</u> the school's communication system. As an instructional leader, administrators must consciously plan for optimum and effective use of space; and, view such physical arrangements as facilitators for the implementation of communication processes, which ultimately help or hinder achievement of educational goals.

Management of Human Resources

1. <u>Information flow</u>. The potential of the bridge role, as an intergroup linking agent, which influences members directly and indirectly was emphasized. Data from this investigation documented the fact that, in nets where special information and issues were the focus, the major intergroup linking agent was the bridge role. It was present in every net. This means that information of all types, but especially that concerned with specific issues, is filtered through group connections by bridging members rather than individually through liaisons. Such information, therefore, has the potential to contain the "flavor" of group norms, opinions, and values as it circulates.

The significance of an administrator possessing knowledge that describes and represents the opinions and thinking of the staff is tremendous. The bridge role represents a boundary spanner and key informant who can bring to a principal the pulse of the school and its culture.

The liaison role can be utilized by administrators and others to pass and receive factual information that does not have to be processed. Policy clarification, nonroutine announcements, and the like can be achieved by these direct contacts. Accuracy and speed of dispersion are achieved, while at the same time, personal contact creates a caring and receptive climate.

Members who occupy key communication roles represent resources that exist in a fairly stable environment. These individuals can support adaptive processes, and provide leadership for activities that require the cooperation of other members. Their skills and ability to function autonomously are significant support for administrators, who are usually pressed for time and who must meet the diversified needs of many programs.

2. Integration of isolates into the system. To be fully efficient and effective, all members should communicate. This study documented isolate contacts as situational and revolving about specific needs. These individuals are capable of communicating, aware of the importance of communication, and are willing to communicate, at least on a limited basis. The following comment summarizes the isolate perspective: "I don't seek or avoid, I just do what come naturally."

Knowing this, an administrator can integrate isolates into the system by arranging opportunities for them to communicate with liaison individuals who were shown to have a like perspective (limited inclusion). Such contact could provide a common ground which would allow liaison contacts to become a starting point for inclusion of isolates into the communication structure.

3. Interpersonal need orientations. The individual needs of inclusion and affection have implications for the school as a workplace. Increased time pressures and larger schools may reduce the opportunities for affection interchange and encourage the formation of small cliques to meet inclusion needs. Communicator comments expressed the desire to receive feedback, other opinions, and new ideas which can only be achieved when members talk to each other regularly. For example, "I present information for feedback. I usually gather information and present results using by own conscience," or "I like to be with people and get their ideas and learn from them." If schools do not create a workplace where these needs can be supported, members may leave. Some individuals can adapt or modify needs with informal contacts or by taking advantage of various activities, others cannot.

> Members may change so that their role conceptions and personalities come better to fit the structural requirements. The incongruent ones may leave the organization by choice or by expulsion. The high turnover in our organizations is due less to technical incompetence than to rejection of the 'conditions of life' in the organization. (Levinson, 1959, p. 179)

Administrators are in a unique position, as leaders of schools, to influence and create the conditions which give life to their workplaces.

Concluding statement. In this study, members who were designated as communicators had a primary group that they relied on for basic support as sources for general, routine information. Trust, reliability and general knowledge were the prime criteria for choosing the primary group members. Those contacted for specific information regarding nonroutine items were chosen because they had established themselves as individuals with some expertise, legitimacy and credibility. The constant repetition of the above characteristics, as bases for work-related communication choices, indicates that the same themes should also be of concern to an administrator. After all, it is the administrative process which provides the means to produce a quality education for students and a quality work experience for school employees.

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